

WAHT IS CLAIMED IS:

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1. A photoelectric converting apparatus  
comprising:

a sensor unit including a plurality of pixels each having at least photoelectric converting means and first amplifying means for amplifying a signal derived from said photoelectric converting means to output the amplified signal; and

10 a memory unit including a plurality of memories  
each having at least storing means for storing  
thereinto the signal derived from said sensor unit and  
second amplifying means for amplifying a signal derived  
from said storing means to output an amplified signal  
wherein

15           a gain of said first amplifying means is made  
different from a gain of said second amplifying means.

2. A photoelectric converting apparatus according to Claim 1, wherein said first amplifying means and said second amplifying means are constituted by MOS transistors.

3. A photoelectric converting apparatus according to Claim 2, wherein said first amplifying means and  
25 said second amplifying means are constituted by both amplifying MOS transistors and load MOS transistors.

4. A photoelectric converting apparatus according to Claim 3, wherein a conductance of the load MOS transistor included in said first amplifying means is made different from a conductance of the load MOS transistor included in said second amplifying means.

5. A photoelectric converting apparatus according to Claim 4, wherein a gate length of the load MOS transistor included in said first amplifying means is made different from a gate length of the load MOS transistor included in said second amplifying means.

6. A photoelectric converting apparatus according to Claim 4, wherein a gate width of the load MOS transistor included in said first amplifying means is made different from a gate length of the load MOS transistor included in said second amplifying means.

7. A photoelectric converting apparatus according to Claim 4, wherein a gate oxide layer thickness of the load MOS transistor included in said first amplifying means is made different from a gate oxide layer thickness of the load MOS transistor included in said second amplifying means.

8. A photoelectric converting apparatus according to Claim 3, wherein a conductance of the amplifying MOS

5           9. A photoelectric converting apparatus  
according to Claim 8, wherein a gate length of the  
amplifying MOS transistor included in said first  
amplifying means is made different from a gate length  
of the amplifying MOS transistor included in said  
10 second amplifying means.

10. A photoelectric converting apparatus according to Claim 8, wherein a gate width of the amplifying MOS transistor included in said first  
15 amplifying means is made different from a gate width of the amplifying MOS transistor included in said second amplifying means.

11. A photoelectric converting apparatus  
20 according to Claim 8, wherein a gate oxide layer  
thickness of the amplifying MOS transistor included in  
said first amplifying means is made different from a  
gate oxide layer thickness of the amplifying MOS  
transistor included in said second amplifying means.

12. A photoelectric converting apparatus  
according to Claim 1, further comprising transferring

